

**MOUTH OF THE COLUMBIA RIVER
SOUTH JETTY BARGE OFFLOADING ZONE
TIER I
SEDIMENT EVALUATION**

October 2005

**Prepared by:
Tim Sherman
Sediment Quality Biologist**

**Technical Review:
Mark Siipola**

**Portland District
Corps of Engineers
CENWP-EC-H**

SUBJECT

There is a potential to dredge up to 4,000 60,000* (see supporting emails in Appendix A for change in volume) CY of bottom material, which historical samples in the area indicate is over 99% sand, to facilitate barge offloading of construction rock to be used in the repair of the Mouth of the Columbia River (MCR) South Jetty. The location of the dredging would be near the south shore of the Columbia River at approximate river mile (RM) 6 (see Figure 1-3). The material is planned for upland placement; to be used in temporary road construction for transporting of rock from the barge to the jetty repair site.

ABSTRACT

This Tier I evaluation was conducted following procedures set forth in the Inland Testing Manual (ITM) and the Upland Testing Manual (UTM), developed through efforts of EPA and the Corps. Guidelines used are those developed to implement the Clean Water Act (CWA), the Marine Protection, Research and Sanctuaries Act (MPRSA), National Environmental Policy Act (NEPA) and Resources Conservation and Recovery Act (RCRA). The methodologies used are those adopted for use in the Dredge Material Evaluation Framework (DMEF) for the Lower Columbia River Management Area, November 1998 (and its updated draft 2005 version, the Sediment Evaluation Framework (SEF)).

This Tier I evaluation, of the proposed dredge material from this project, indicates that the material is acceptable for both unconfined in-water and upland placement. No significant, adverse ecological impacts are expected from disposal in terms of sediment toxicity. In addition, the proposed project volume of 4,000 CYs meets the "No Test" guidance for small projects as provided in the DMEF Section 6.6.4 and Table 6-2.

ANALYSIS OBJECTIVES

The sediment characterization program objectives and constraints are to: Characterize sediments to be dredged for evaluation of the risk potential for unacceptable environmental impacts from the dredging and placement of dredge material.

HISTORICAL DATA

MCR has been extensively sampled. The following historical sampling events, with samples in this study area, include channel improvement (CRCIP 1197 & 2000) and operation and maintenance (O&M1990 & 2000). In 2000 a Sediment Trend Analysis (STA) was conducted by GeoSea Consulting, under contract to the Corps. Over twelve

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hundred (1,252) samples were collected in the MCR and surrounding off-shore locations (see Figure 4). Physical analyses, of the samples surrounding the study area (6 samples selected), indicate the project area consists of >99 % sand (see Figures 5). Select samples (10) from the GeoSea study within the MCR project were analyzed for physical and chemical contamination. These samples indicated no contaminants were detected at or near the DMEF screening levels (See <http://www.nwp.usace.army.mil/ec/h/hr/Reports/Mcr/mouth00.pdf> for the complete report on chemical results).

One (1) additional sample within the study area, from the 1997 sampling event, is included in the Historical Data Table.

Table 1: Historical Data, In Proximity to the Study Area

Project - Sample ID	Median Grain Size (mm)	% Sand	% Fines
GeoSea MCR/DTA - 549	0.218	99.99	0.01
GeoSea MCR/DTA - 577	0.252	99.99	0.01
GeoSea MCR/DTA - 578	0.272	99.99	0.01
GeoSea MCR/DTA - 605	0.212	100.00	0.00
GeoSea MCR/DTA - 606	0.212	99.99	0.01
GeoSea MCR/DTA - 607	0.313	100.00	0.00
COE O&M - CR-BC-01	0.420	97.50	2.50

CONCLUSION

This Tier I evaluation was reviewed and approved by the Regional Management Team (EPA, ODEQ and COE), as provided for in the DMEF. The undersigned find and concur that this Tier I evaluation of the proposed dredge material from this project indicates that the material is acceptable for both unconfined in-water and upland placement. No significant, adverse ecological impacts are expected from such placement in terms of sediment toxicity. In addition, the proposed project meets the "No Test" volume for small projects as provided in the DMEF Section 6.6.4 and Table 6-2.

John Malek
EPA

Date

Christine Svetkovich
ODEQ

Date

Mark Siipola
COE

Date

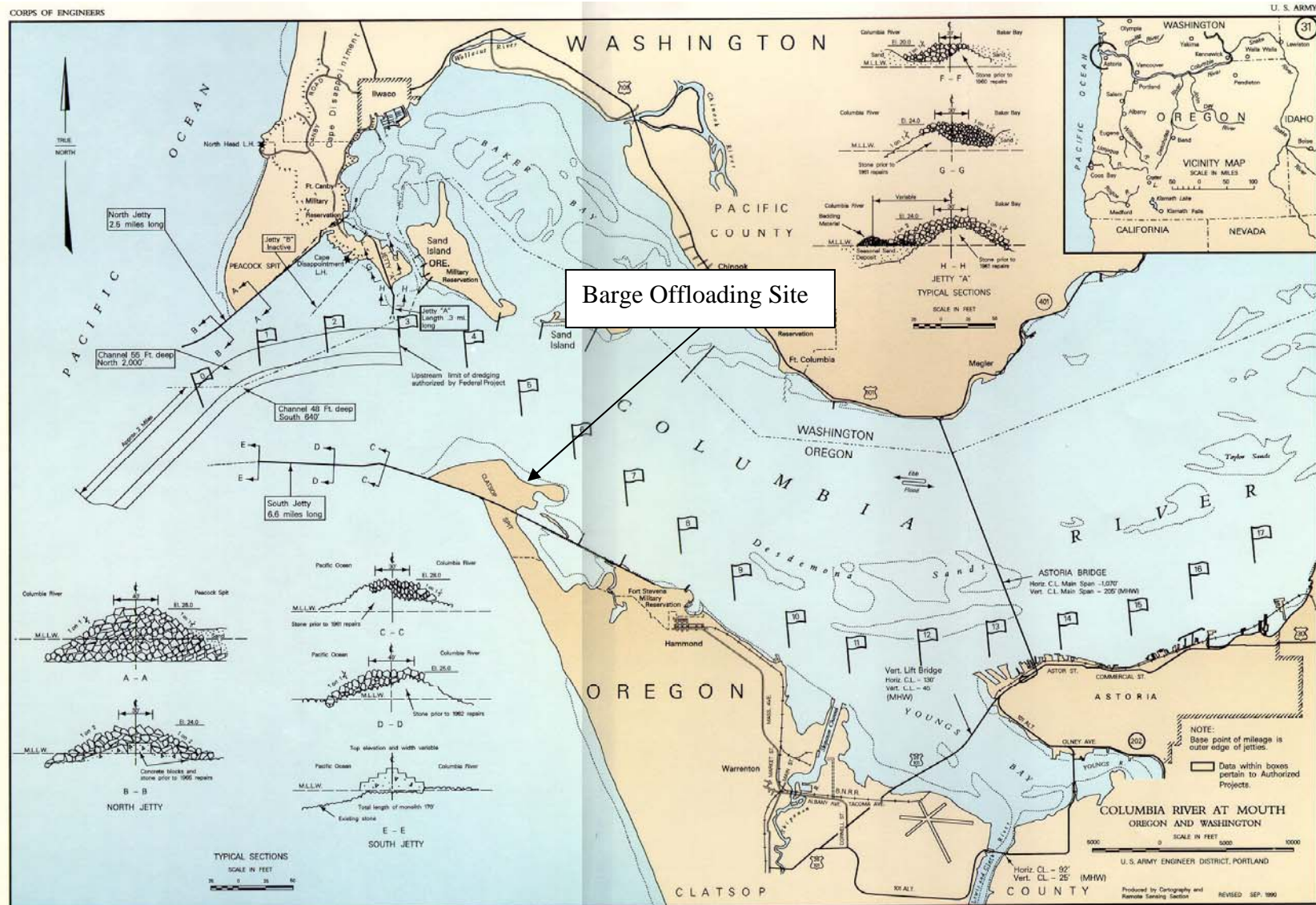
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REFERENCES

1. U.S. Army Corps of Engineers, Portland District and Seattle District; U.S. Environmental Protection Agency, Region 10; Oregon Department of Environmental Quality; Washington State Department of Natural Resources and Department of Ecology. 1998 Final. Dredge Material Evaluation Framework for the Lower Columbia River Management Area.
2. U.S. Environmental Protection Agency and U.S. Army Corps of Engineers. February 1998. Evaluation of Dredged Material Proposed for Discharge in Inland and Near Coastal Waters - Testing Manual (referred to as the "Inland Testing Manual").
3. U.S. Army Corps of Engineers. January 2003. Evaluation of Dredged Material Proposed for Disposal at Island, Nearshore, or Upland Confined Disposal Facilities - Testing Manual (referred to as the "Upland Testing Manual").
4. Clean Water Act, 40 CFR 230 (b) (1).
5. McLaren, P., Hill S., GeoSea Consulting. April 2000. A Sediment Trend Analysis (STA[®]). Brentwood Bay, BC, Canada.
6. Sherman, T. U.S. Army Corps of Engineers. December 2000. Mouth of the Columbia River Sediment Evaluation.
7. U.S. Army Corps of Engineers. 1997-1999. Columbia River Channel Improvement Project, Appendix B

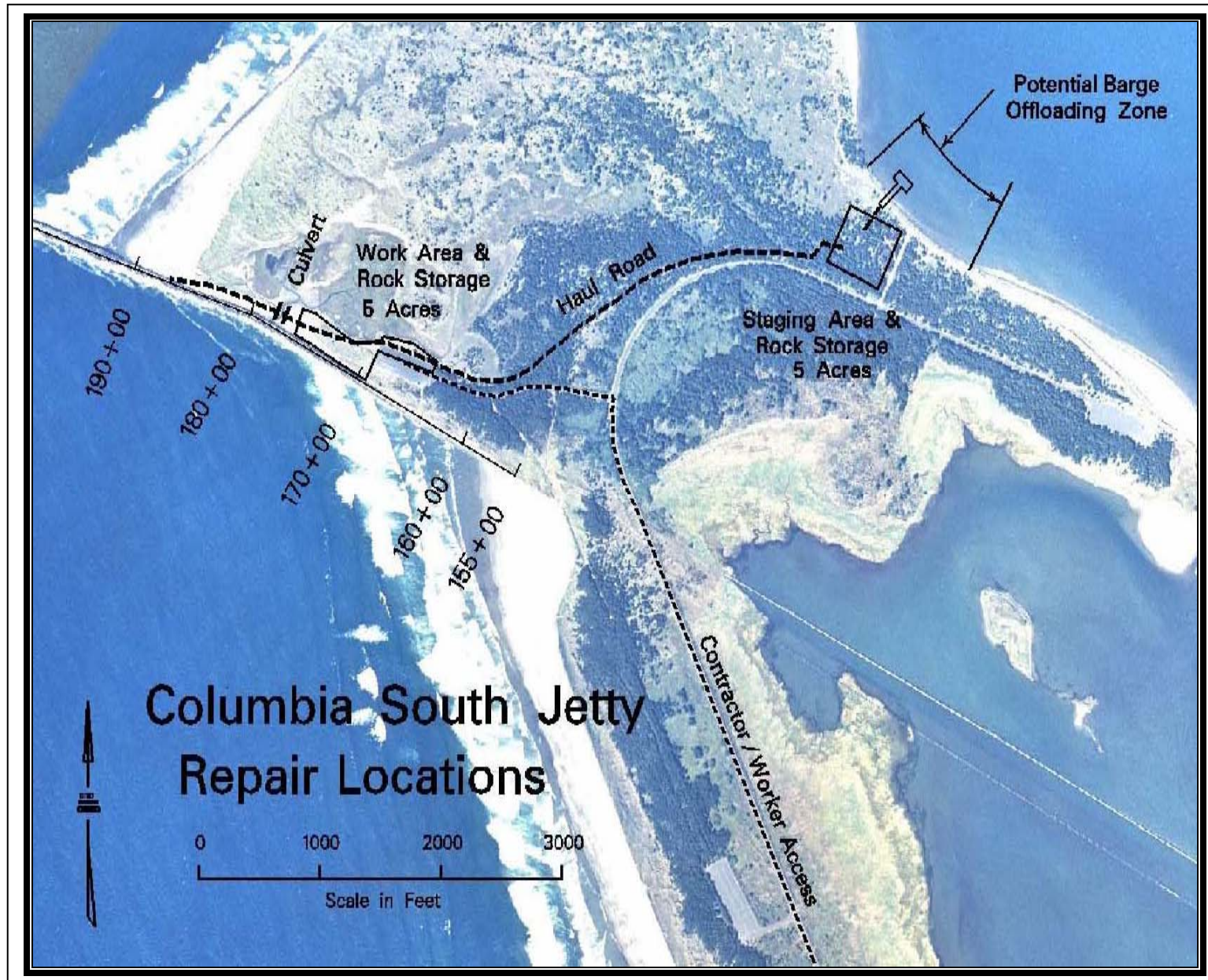
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Figure 1: MCR Vicinity Map



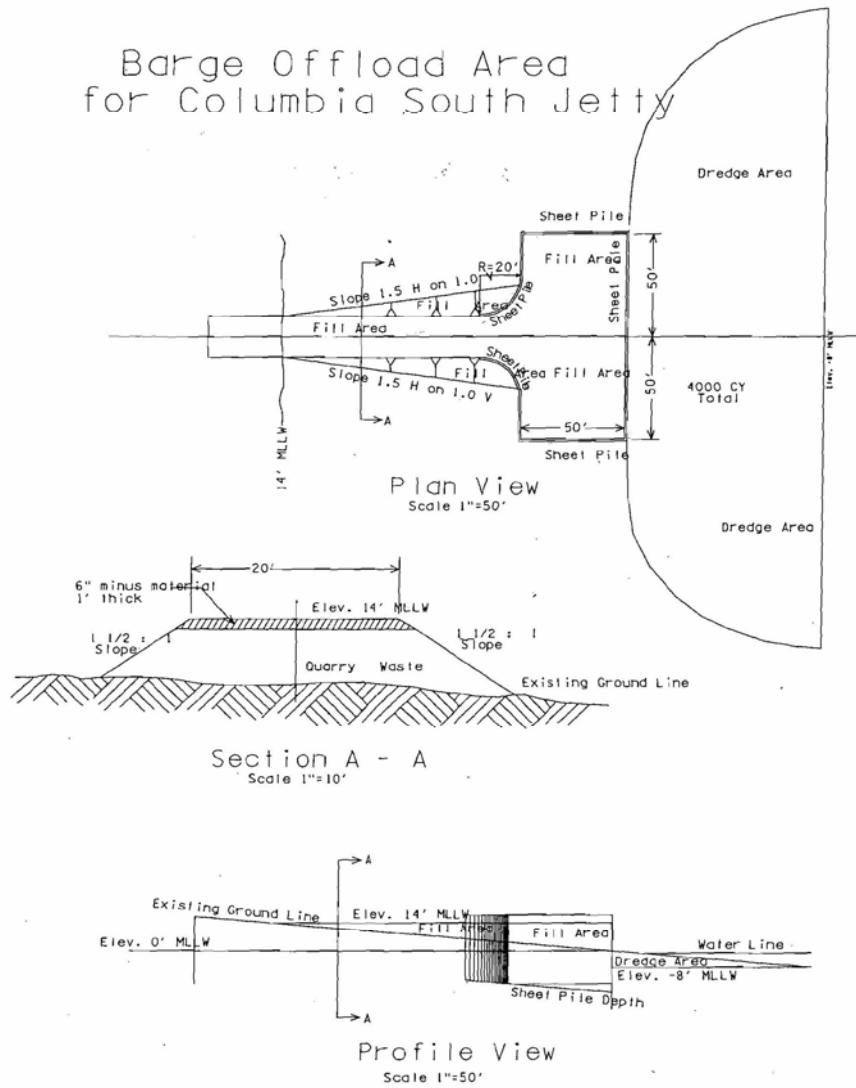
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Figure 2: Barge Offloading Zone - Dredge Area



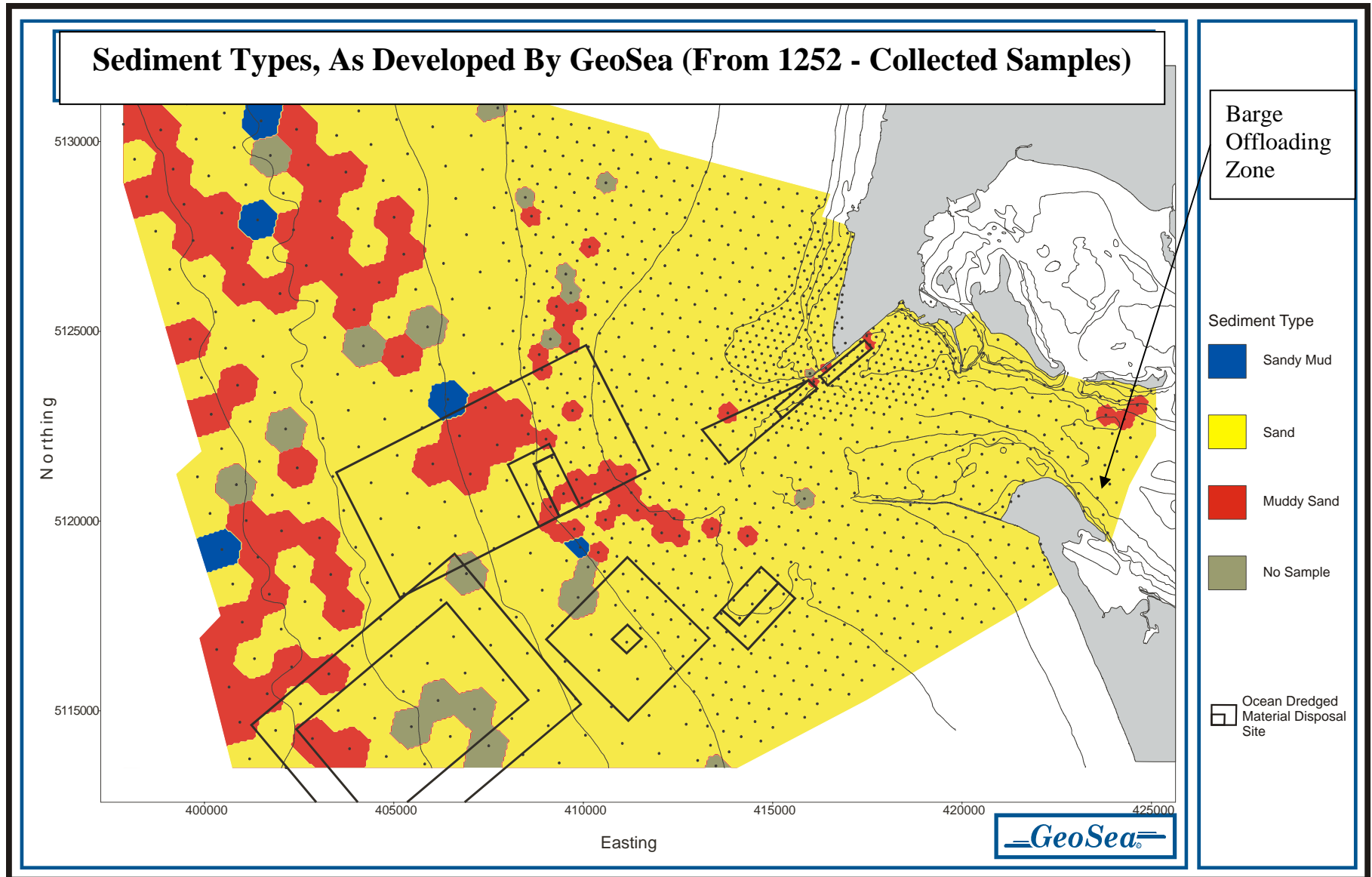
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Figure 3: Barge Offloading Zone - Dredge Area Detailed Drawing



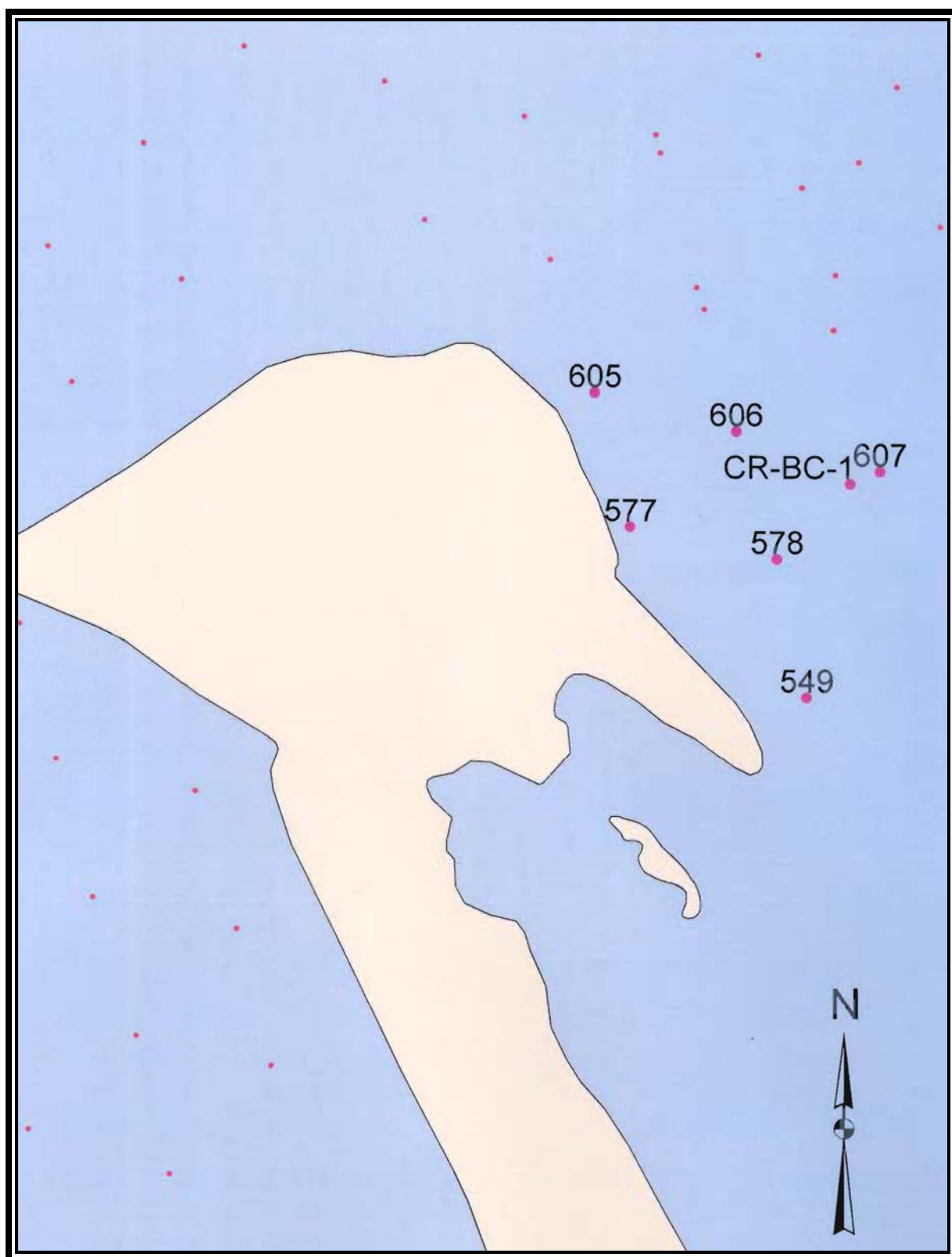
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Figure 4: Sediment Types



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Figure 5: Historical Samples Within the Study Area



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APPENDIX A

Appendix A contains e-mail that allows the original Tier I document to dredge 4,000CY continue to be enforce, with an increase in dredge volume to 60,000CY of dredge material.

From: Siipola, Mark D NWP
Sent: Thursday, January 19, 2006 10:04 AM
To: Michalsen, David R NWP; Cook, Marci E NWP
Cc: 'Malek.John@epamail.epa.gov'; 'MELVILLE Tom'; 'SVETKOVICH Christine'; Sherman, Timothy J NWP
Subject: RE: Tier I Sediment evaluation

Importance: High

David and Marci

The RMT has completed its review of the changes proposed for the South Jetty barge offloading facility. It is the contentious of the RMT that the existing information is sufficient for a Tier I determine the material proposed to be dredged at this site is suitable for unconfined in-water or upland disposal without further testing. The increase in the estimated quantity (from 4,000 to 60,000 CY) does not alter the original determination of the RMT for this project. This concludes the RMT's rereview and action.

Mark D. Siipola
Ocean Dumping Coordinator
CENWP-EC-HR
<https://www.nwp.usace.army.mil/ec/h/hr/>

-----Original Message-----

From: MELVILLE Tom [mailto:MELVILLE.Tom@deq.state.or.us]
Sent: Thursday, January 19, 2006 8:08 AM
To: Cook, Marci E NWP; Malek.John@epamail.epa.gov; Siipola, Mark D NWP
Cc: Michalsen, David R NWP; SVETKOVICH Christine; Sherman, Timothy J NWP
Subject: RE: Tier I Sediment evaluation

All,

I concur with Mark and John.

Tom

Tom Melville
Section 401 Program Coordinator

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Policy, Program and Project Assistance Section Water Quality Division Department of
Environmental Quality ph. 503-229-5845

-----Original Message-----

From: Cook, Marci E NWP [mailto:Marci.E.Cook@nwp01.usace.army.mil]
Sent: Wednesday, January 18, 2006 8:26 AM
To: Malek.John@epamail.epa.gov; Siipola, Mark D NWP
Cc: Michalsen, David R NWP; MELVILLE Tom; SVETKOVICH Christine; Sherman, Timothy J NWP
Subject: RE: Tier I Sediment evaluation

All,
I called John and explained to him the circumstances surrounding this issue.
He was satisfied with the answer.
Marci

-----Original Message-----

From: Malek.John@epamail.epa.gov [mailto:Malek.John@epamail.epa.gov]
Sent: Tuesday, January 17, 2006 3:01 PM
To: Siipola, Mark D NWP
Cc: Michalsen, David R NWP; Cook, Marci E NWP; MELVILLE Tom; SVETKOVICH Christine; Sherman, Timothy J NWP
Subject: RE: Tier I Sediment evaluation

All,

I was on my flex day Friday when this came out. Amidst some real crises I have had the opportunity to read this email, and also the supplemental information that Marci sent out over the weekend. The map/figure in Marci's gives me good perspective as to the extra area/volume source. EPA is in agreement with the evaluation Mark completed below concerning the continued applicability of the Exclusionary status of the larger dredged prism. Consequently, from EPA's perspective as a member of the RMT, and characterization of the material, the original decision still stands.

Separately, as a commenting agency under our various laws, I'm a bit puzzled that it apparently took so long for the Corps to determine that a larger area was needed. Was there an earlier communication on this aspect of the project that I just missed? I wasn't among the calls Marci made to the agencies, although I was burning a fair amount of AL earlier. Just an inquiring mind inquiring....

John Malek, Team Leader
Sediment Management Program
EPA Region 10
1200 Sixth Ave, ETPA-083
Seattle, Washington 98101

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Voice: (206) 553-1286
Fax: (206) 553-1775

"Siipola, Mark D
NWP"

<Mark.D.Siipola@nwp01.usace.army.mil> To
"Michalsen, David R NWP"
<David.R.Michalsen@nwp01.usace.army.mil>, "Cook, Marci E NWP"
01/13/2006 03:45 PM <Marci.E.Cook@nwp01.usace.army.mil>
I>

cc

John Malek/R10/USEPA/US@EPA,
SVETKOVICH Christine
<SVETKOVICH.Christine@deq.state.or.us>, MELVILLE Tom
<MELVILLE.Tom@deq.state.or.us>,
"Sherman, Timothy J NWP"
<Timothy.J.Sherman@nwp01.usace.army.mil>

Subject

RE: Tier I Sediment evaluation

David and Marci

A Tier I site evaluation for the dredging and disposal of 4,000 CY of material for a barge offloading facility to facilitate the South Jetty repair was completed in October 2005 and reviewed by the RMT. The RMT members consisted of John Malek (EPA), Christine Svetkovich (DEQ), and myself. The RMT found that there was sufficient existing information to determine that the material proposed to be dredged was suitable for unconfined in-water disposal without further testing. At that time it was estimated that approximately 4,000 CY would be required to be

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dredged. Subsequently it has been determined that to bring ocean going barges into the offloading facility the area must be dredge 10 feet below the existing seabed surface. This means that a total estimated quantity of 60,000 CY will need to be remove. Questions have been raised by various resource agencies because of the significant increase in volume whether the Tier I evaluation is still valid.

The MCR area (RM -2 to 5) has been ranked exclusionary by the DMEF RMT agencies based upon existing testing results the last of which was conducted in 2000. The DMEF does not list a no-test volume for projects ranked exclusionary as by definition in the CWA and MPRSA as the material is excluded from testing. However, note it has been standard practice to test even areas ranked exclusionary on a regular basis. For the nearby federal MCR project this has been every 10 years. The proposed project is in a high energy area far removed from any know source of contamination. Further, the material to be dredged is "native" material as the area has never been disturbed by previous dredging activities and therefore not likely to have been exposed to contaminate sources. Studies has shown that material composing Clatsop Spit are very old even at shallow depths. George Kaminsky's June 2005 report titled "Vibracores at the Mouth of the Columbia River" (Ecology Publication #05-06-020) reports ages at various depths based upon radiocarbon dating. The nearest core (# 207), which is located just north of the elbow of the South Jetty, gave the following for ages at three depths:

Depth in Core 207	Material Dated	Radiocarbon Age (yrs BP)	Calibrated Age Range(yrs)
95 cm (37 in, 3.1 ft)	Organics in mud	635 +/- 45	Cal BP 548-662
127 cm (50 in, 4.2 ft)	barnacle fragment	995 +/- 35	Cal BP 121-313
375 cm (148 in, 12.3 ft)	barnacle fragment	1070 +/- 40	Cal BP 251-427

The above indicates that the material even as shallow as 3 feet below the surface on Clatsop Spit have been effectively isolated for better than 6 centuries. Based upon the above it is still my opinion as one member of the RMT that approved the original Tier I evaluation that there is still sufficient existing information available to not require sampling and testing of the material proposed to be dredged at the South Jetty barge offloading facility. Because of the significant increase in the volume proposed to be dredged and questions raised it is necessary for the other members of the RMT to review the proposed project and reassess their position on this project as I have here.

Mark D. Siipola
Ocean Dumping Coordinator
CENWP-EC-HR
<https://www.nwp.usace.army.mil/ec/h/hr/>

From: Michalsen, David R NWP
Sent: Friday, January 13, 2006 1:25 PM
To: Siipola, Mark D NWP

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Cc: Cook, Marci E NWP; Illias, David J NWP; Moritz, Hans R NWP; Helwig, Lance A NWP;
Larson, Kim W NWP

Subject: Tier I Sediment evaluation

Mark,

Marci Cook has asked for a statement from the sediment quality coordinator in response to her preliminary discussions with the agencies for modifying the dredging quantities on an existing permit. Basically in effect, summarizing what you told me earlier today should suffice (i.e. although the samples near the MCR south jetty barge offloading site were surface samples, you have confidence that this sediment type persists throughout the area to be dredged).

An estimate of the maximum dredging depth below the current seabed is roughly 10 ft in order to bring a ocean going barge 200 ft from the current shoreline.

Thanks for your help,

Dave

David R. Michalsen, M.Oc.E

Hydraulic Engineer

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Fax (503) 808-4875

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